20. A device according to claim 11, wherein a base portion of each vessel may be held substantially at the level of the recess.

REMARKS

The Examiner objected to the Information Disclosure Statement filed on October 23, 2000, because it did not include a concise explanation of the relevance of two references. In response to this objection, Applicant encloses English abstracts of Patent Nos. WO 98/20965 and German Patent No. 19543401. Applicant submits that both English abstracts provide sufficient detail to meet the requirements of 37 C.F.R. § 1.98(a)(3). If the Examiner needs additional information regarding these references, he is encouraged to contact the undersigned at his earliest convenience.

The Examiner has objected to the drawings for failing to show the features of the "guide means," "gas manifold" and the "fixing means". In response to this objection, Applicant has amended Figure 4 to identify one example of the "gas manifold" as numeral 21 generally, and Applicant has amended Figure 3 to identify one example of the "guide means" as numeral 23 generally. Applicant has also amended the specification to incorporate these new numerals. Regarding the "fixing means," Applicant has amended the specification (as is discussed below) to more adequately describe the fixing means, rending this particular objection to the drawings moot.

The Examiner also objected to the drawings for failing to show the adapter block and condenser as stated on page 4, lines 20-32, of the application. Applicant submits that the adapter block and condenser unit are already shown in Figure 4. It should also be noted that the adapter block of the present invention is designed to fit on top of a conventional

laboratory magnetic stirrer of which one of ordinary skill in the art would be aware. For further clarification, the Applicant has amended page 4 of the specification to describe the adapter block and condenser as being found in Figure 4.

The Examiner objected to the specification for failing to contain an abstract of the disclosure. In response to this objection, Applicant has submitted a new abstract that substantially corresponds to the abstract provided in PCT application number WO/99/13988, of which the present application claims priority.

The Examiner also objected to the specification under 37 CFR § 1.171 because, in the Examiner's opinion, it was unclear exactly how the magnetic field is produced to allow for the stirring within the reaction vessels. In response to this objection, Applicant believes that one of ordinary skill in the art would have no difficulty in understanding the operation of the magnetic stirring system in accordance with the present invention. The Examiner has noted that it is well known in the art that stirring can be produced in a vessel if a magnetic field is produced below the vessel by means of a rotating magnet in order to cause a magnetic stirring bar within the vessel to rotate. Applicant notes, however, that the properties of magnetic stirring systems are conventionally understood by those of ordinary skill in the art, and that those of ordinary skill in the art would understand the interaction of the magnet and the vessels by viewing the figures included with the present application. Given that the present invention is directed to a magnetic stirring system, it would therefore be well understood by one of ordinary skill in the art, by reading the present application (see, for example, the discussion on pgs. 1-2 of the specification), that magnetic stirring bars are located within the

vessel, and that they would rotate when the central magnet rotates due to the conflicting magnetic fields.

The Examiner also objected to the specification for failing to provide proper antecedent basis for the term "fixing means" as described in Claim 1. In response to this objection, Applicant notes that page 2, first full paragraph, of the specification currently describes the fixing means for holding a plurality of reaction vessels as preferably comprising "a plurality of sockets each designed to securely accommodate a reaction vessel." This phrase has therefore also been added to page 4 of the specification in order to more clearly provide proper antecedent basis for the fixing means. Because this feature was originally included in the specification and is shown in Figures 1, 2 and 4 of the drawings, Applicant submits that no new matter is being included with the incorporation of this clarification of the specification.

The Examiner rejected Claims 1-10 under 35 U.S.C. §112, first paragraph, because the specification, in the Examiner's opinion, does not reasonably provide enablement for the device comprising a "fixing means". In response to this rejection, Applicant notes once again that page 2 of the original specification describes the fixing means for holding a plurality of reaction vessels (first full paragraph on pg. 2) and preferably comprising a plurality of sockets, each of which is designed to securely accommodate a reaction vessel. Applicant also notes that this terminology has been added to page 4 of the specification and was also clearly shown in originally-filed Figures 1, 2, 4 and 5. For these reasons, Applicant submits that the Examiner's rejection is overcome.

The Examiner rejected Claims 11 and 12 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the

subject matter which Applicant regards as the invention. In particular, the Examiner noted that the claim discusses both "a magnetic or hot plate magnetic stirrer" and "also claiming that the magnetic field is generated by the laboratory hot plate." The Examiner has asserted that if the device comprises a magnetic stirrer, then the magnetic field cannot be produced by the hot plate. In response to this rejection, Applicant has amended Claims 11 and 12 such that only a magnetic stirrer is claimed. Additionally, Applicant has replaced the term "device" in Claim 12 with the term "stirrer". This amendment has been made solely to address potential issues concerning antecedent basis and is not being made for any reasons related to patentability. If the Examiner has any questions concerning this amendment, he is encouraged to contact the Attorney for the Applicant at his earliest convenience.

The Examiner previously indicated that Claim 12 would be allowable if placed in independent form and rewritten to overcome the rejections under 35 U.S.C. §112. Applicant has therefore added new independent Claim 13 in accordance with the Examiner's suggestions. Additionally, Applicant has removed the term "securely" from claims 11 and 13, as the term is not necessary for the overall inventive features of the claim. If the Examiner has any questions concerning this amendment, he is encouraged to contact the Attorney for Applicant at his earliest convenience.

The Examiner rejected Claims 1-5, 8-9 and 11-12 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,356,346, issued to Landsberger. The Examiner also rejected Claims 1-5, 8-9 and 11-12 under 35 U.S.C. §103(a) as being anticipated by U.S. Patent No. 5,206,479, issued to Zakaria. In both cases, the Examiner asserted that, although the Landsberger and Zakaria references do not use terms that are identical to those used by

Applicant, it was obvious, in the Examiner's opinion, that the devices do meet the limitations of the claims.

In response to this rejection, Applicant has amended Claims 1 and 11 to describe the device as including a recess in the adapter block base and having the centers of the reaction vessels distributed around the recess outside of the periphery of the recess such that each and every position for holding a reaction vessel is effectively positioned for stirring with respect to the magnetic field. By having the reaction vessels arranged outside of the periphery of the magnetic stirrer, the vessels can be spread out more evenly and more widely, resulting in a greater number of reaction vessels that may be accommodated in the adapter block. This greatly increases the volume of substances that can be processed at a single time. Additionally, by having the bases of the reaction vessels in this position, the reaction vessels can be located at a lower level, even to the point of being in line with the rotor. This promotes highly effective stirring. Furthermore, by having all of the reaction vessels located outside of the periphery, one is able to ensure a uniform stirring of the reaction medium inside each vessel. In other words, the amount and degree of stirring will not vary from vessel to vessel.

None of these features, and attendant advantages, are taught or disclosed by the prior art cited by the Examiner. For example, the Landsberger reference includes a plurality of vessels in different locations above the stirrer. In this arrangement, the amount of magnetic interaction will vary from vessel to vessel, particularly when vessels above the periphery of the stirrer are compared to vessels positioned closer to the center of the stirrer. Furthermore, the Landsberger reference discloses a test tube stirring support which is specifically designed to cause a stirring member to oscillate vertically. The vertical oscillation therefore requires that

the axis of the test tube (and the test tube holder) to be directly above the magnetic rotor in order to achieve any degree of efficiency. The position of the test tube holder must therefore lie entirely within the periphery of any recess in the base of the test tube holder which could accommodate a stirrer housing portion containing the magnetic rotor, teaching away from the present invention as currently claimed.

Additionally, the arrangement described in the Zakaria reference does not disclose an adapter block including a recess in the base thereof. Furthermore, the Zakaria reference also provides for a reduced amount of space in which reaction vessels can be placed. In particular, Figure 4 of the Zakaria reference shows the individual magnetic stirrers positioned along the periphery of the adapter block in relative alignment with the containers. This arrangement is directly contrary to the invention as claimed, wherein the reaction vessels are arranged outside the periphery of the recess (and the stirrer). Because the feature of positioning the reaction vessels such that the centers are distributed around the recess outside of its periphery is not taught, disclosed or even suggested by the Zakaria or the Landsberger references, Applicant submits that each of these claims, as amended, are patentable over the prior art.

Applicant has also added new Claims 14-20. Claims 14-16 are dependent upon new independent claim 13, which the Examiner has already stated is allowable over the prior art. Claims 17 and 19 describe the fixing means as comprising a plurality of holders (as described on page 2 of the specification). Claim 18 and 20 describe the base portion of each of the vessels as being capable of being located at substantially the level of the recess. As discussed above, these features are not taught, disclosed or suggested by the prior art.

Applicant therefore submits that all outstanding objections and rejections have been overcome by the foregoing amendments or remarks, and that each of Claims 1-12 and new Claims 13-20 are now in condition for allowance. A check for $200.00 is included with the submission of this reply. The Examiner is hereby authorized to charge any deficiency or credit any overpayment to deposit account number 06-1450 of Foley & Lardner. A duplicate copy of this action is attached for this purpose.

Respectfully submitted,

Date: Feb. 14, 2002

By: Michael D. Rechtin

Michael D. Rechtin
Registration No. 30,128

Marshall J. Brown
Registration No. 44,566

FOLEY & LARDNER
One IBM Plaza, Suite 3300
330 North Wabash Avenue
Chicago, Illinois 60611-3608
Telephone: (312) 755-1900
Facsimile: (312) 755-1925

APPENDIX - AMENDED CLAIMS

1. (Once Amended) A device comprising an adapter block for seating on a laboratory magnetic stirrer and having a recess in the base thereof for receiving an upper portion of the stirrer, the adapter block containing fixing means for holding a plurality of reaction vessels, wherein when the adapter block is co-operatively positioned on a magnetic stirrer within a magnetic field generated by [a laboratory] the magnetic stirrer, each and every position for holding a reaction vessel is effectively located for stirring with respect to the magnetic field, with the center of each vessel distributed around the recess outside its periphery.

11. (Once Amended) A magnetic [or hotplate magnetic] stirrer [securely] fitted with an adapter block wherein the adapter block includes a recess in the base thereof for receiving an upper portion of the stirrer in which a magnetic field is generated, and includes [contains] fixing means for holding a plurality of reaction vessels with their centers distributed around the recess outside its periphery, and wherein the adapter block is positioned within the magnetic field generated by the [laboratory hotplate] magnetic stirrer such that each and every socket is effectively positioned for stirring with respect to the magnetic field.

12. (Once amended) A magnetic [or hotplate magnetic] stirrer according to claim 11 wherein the [device] stirrer incorporates a hotplate and a condenser unit.

13. (New) A magnetic stirrer fitted with an adapter block wherein the adapter block contains fixing means for holding a plurality of reaction vessels, the adapter block positioned within the magnetic field generated by the laboratory magnetic stirrer such

that each and every socket of the fixing means is effectively positioned for stirring with respect to the magnetic field, and wherein the stirrer incorporates a condenser unit.

14. (New) A device according to claim 13, wherein the adapter block includes a recess in the base thereof for receiving an upper portion of the stirrer.

15. (New) A device according to claim 14, wherein the centers of the reaction vessels are distributed around the recess outside its periphery.

16. (New) A device according to claim 15, wherein a base portion of each vessel may be held substantially at the level of the recess.

17. (New) A device according to claim 1, wherein the fixing means comprises a plurality of holders.

18. (New) A device according to claim 1, wherein a base portion of each vessel may be held substantially at the level of the recess.

19. A magnetic stirrer according to claim 11, wherein the fixing means comprises a plurality of holders.

20. A device according to claim 11, wherein a base portion of each vessel may be held substantially at the level of the recess.

Figure 5 is a plan view of the condenser unit.

Figure 6 is a cross-section of the condenser unit along line A.

The device illustrated in Figure 1 comprises the adapter block (1) which is constructed from PTFE and is circular in shape with sockets (2) suitable for securely accommodating the test tube reaction vessels (3) located about the perimeter of the device. One face of the device is equipped with a central recess whereby the stirrer plate of the magnetic stirrer (5) is secured within the recess thereby ensuring that the device is effectively located for stirring within the magnetic field. A gas manifold comprising a gas inlet (4) and gas outlets (4a) is located at the centre of the adapter block.

Figures 2 and 3 show the location of the gas inlet (4) and gas outlets (4a) more clearly. Figure 3 illustrates guide means, shown generally at 23, comprising the central recess (5a) formed by the raised rim (5b) which ensure the adapter block is correctly located within the magnetic field of the laboratory stirrer.

The device shown in Figures 3 and 4 comprises an adapter block (11) and a condenser unit (12) both of which are constructed from aluminum and are circular in shape. The adapter block comprises fixing means in the form of sockets (13) located about the perimeter of the device suitable for accommodating the test tube reaction vessels (14). The condenser unit contains openings (15) through which the test tube reaction vessels pass. The condenser unit is equipped with inlet/outlets (18) which permit cooling fluid to flow through the condenser unit. The adapter block and condenser unit are substantially parallel to one another. One face of the adapter block is equipped with a recess whereby the hotplate of a hotplate/magnetic stirrer (16) may be secured within the recess thereby ensuring that the adapter block is effectively located within the magnetic field. A gas manifold, shown generally at 21, comprising a gas inlet (17) and gas outlets (17a) is located at the centre of the condenser unit.

ABSTRACT

A reaction station for performing parallel synthesis with magnetic stirring. The device is capable of accommodating a plurality of reaction vessels being specifically adapted so that when placed in a magnetic field, such as that generated by a laboratory magnetic stirrer, any reaction vessel accommodated by the device is in an effective position for stirring with respect to the magnetic field.

Microwave heating with several test vessel stations turning on rotor

Patent Number: DE19543401
Publication date: 1997-05-22
Inventor(s): LAUTENSCHLAEGER WERNER (DE)
Applicant(s):: MIKROWELLEN SYSTEME MWS GMBH (CH)
Requested Patent: ☐ DE19543401
Application Number: DE19951043401 19951121
Priority Number(s): DE19951043401 19951121
IPC Classification: B01L7/00 ; H05B6/80 ; B01F9/10 ; B01F15/06
EC Classification: B01F13/08C, B01F13/08C1, G01N1/44, B01J19/12D6
Equivalents:

Abstract

The original unit heats samples using microwaves. Its heating chamber (3) contains a sample vessel (11) holder with a cup-shaped lower section (12) and cover (13). A first magnet (32) is rotated by a second, external magnet (36), within an effective range. In the new unit, there is a rotor (6) in the heating chamber (3), which turns or swings back and forth about an upright axis of rotation (8), driven by a gear unit (41). Around the rotor are several stations (9) for test vessels, any or all of which contain a magnet (31). One or more second magnets (36) are arranged on a circle, close enough to influence the first magnet(s). Also claimed are magnets as above.

1/9/2 (Item 1 from file: 351)
DIALOG(R)File 351:Derwent WPI

011880755 **Image available**
WPI Acc No: 1998-297665/**199826**
XRAM Acc No: C98-092793

Reaction chamber for corrosive and hazardous substances - has platform carrying and processing numbers of sample containers simultaneously, used e.g. for combinatorial synthesis

Patent Assignee: DOEBELIN W (DOEB-I); HETTLAB AG (HETT-N)
Inventor: DOEBELIN W; DOBELIN W
Number of Countries: 080 Number of Patents: 006
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 9820965	A1	19980522	WO 97CH431	A	19971113	199826	B
CH 688987	A5	19980715	CH 962811	A	19961113	199833	
AU 9748602	A	19980603	AU 9748602	A	19971113	199842	
EP 946279	A1	19991006	EP 97911098	A	19971113	199946	
			WO 97CH431	A	19971113		
JP 2001504030	W	20010327	WO 97CH431	A	19971113	200122	
			JP 98521999	A	19971113		
EP 946279	B1	20011010	EP 97911098	A	19971113	200167	
			WO 97CH431	A	19971113		

Priority Applications (No Type Date): CH 962811 A 19961113
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9820965	A1	G	16	B01J-019/00	
Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
CH 688987	A5			B01F-013/08	
AU 9748602	A			B01J-019/00	Based on patent WO 9820965
EP 946279	A1	G		B01J-019/00	Based on patent WO 9820965
Designated States (Regional): CH DE FR GB IT LI					
JP 2001504030	W		13	B01J-019/00	Based on patent WO 9820965
EP 946279	B1	G		B01J-019/00	Based on patent WO 9820965
Designated States (Regional): CH DE FR GB IT LI					

Abstract (Basic): WO 9820965 A

A novel reaction chamber system, for simultaneously processing several corrosive and/or dangerous, liquid or dissolved samples, includes the chamber (1), a platform accepting individual sample containers (8) and an external shaker drive, which is magnetically coupled with the platform.

USE - The reaction chamber or cabinet is especially used (claimed) to carry out combinational chemical syntheses, evaporation or related operations.

ADVANTAGE - Corrosive or dangerous samples are usually handled individually, causing various difficulties. The present system allows a number of samples to be handled simultaneously. Various processing stages are effected automatically, as required e.g. for combinatorial chemical syntheses. All the required functions and conditions are catered for, including vacuum, corrosion resistance, non-contact heating, mixing, filling and emptying of samples during operation.

Dwg.1/3

Title Terms: REACT; CHAMBER; CORROSION; HAZARD; SUBSTANCE; PLATFORM; CARRY;

PROCESS; NUMBER; SAMPLE; CONTAINER; SIMULTANEOUS; COMBINATION; SYNTHESIS
Derwent Class: B05; E19; J04
International Patent Class (Main): B01F-013/08; B01J-019/00
International Patent Class (Additional): B01D-001/26; B01L-007/02
File Segment: CPI
Manual Codes (CPI/A-N): B11-C01; E11-K; J04-B
Chemical Fragment Codes (M2):
01 M417 M424 M720 M740 M781 M903 N104 Q435
Chemical Fragment Codes (M3):
01 M417 M424 M720 M740 M781 M903 N104 Q435
Chemical Fragment Codes (M6):
02 M903 Q435 R502
?

S PN=DE 19543401
S2 2 PN=DE 19543401
?